ELEMENT FOUR: STATUS AND CONDITION

Status and condition are closely related, and are two basic elements utilized in assessing the future needs of the State's aviation system. As defined in Element Two, the STATUS of the aviation system is a description of the individual facilities in the system in terms of specific administrative, economic, geometric, physical, and operational characteristics. The status of a facility describes or defines the role that each airport/heliport and aviation system component should perform in the total State aviation system. The CONDITION of the system, or of an individual facility, is its level of fitness in relationship to its status.

To present the findings regarding the status and condition of the existing system of aviation facilities, this chapter is organized in the following manner:

- Status of the Existing System;
- Aviation Development and Planning Guidelines; and,
- Condition of the Existing System.

4.1 STATUS OF THE EXISTING SYSTEM

As described in Element Three, the status of aviation facilities in Arizona can be defined through four facility classifications:

- 1. A classification system based on the National Plan Integrated Airport Systems (NPIAS);
- 2. A coding system developed by the FAA used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at an airport referred to as the Airport Reference Code (ARC);
- 3. A state classification system that segregates the State's system of airports into two subsystems--Primary and Secondary --based primarily on level of service an airport or heliport currently provides, or is intended to provide, to a community or region; and
- 4. A design classification system developed by the Arizona Department of Transportation (ADOT), based on a state classification and existing and former FAA airport classification categories. While these classifications are no longer used by the FAA, they continue to be used in Arizona to assist in setting minimum development standards and planning guidelines for airport facility development in the state.

Each of these classification systems are inter-related and, when applied to an individual facility, define the administrative, economic, geometric, physical, and operational characteristics of that facility. Since various airports have differing roles within the system, defining these parameters allows for determining each facility's condition relative to its role in serving the community.

The following examples use two airports, with differing roles, to illustrate the use of the various classification systems in determining a facility's status. The first is Phoenix Sky Harbor International Airport, considered a national passenger hub airport, and the second is Kearny Airport, a small, public use landing strip.

- ◆ Phoenix Sky Harbor International Airport is classified as a Primary Commercial Service Long Haul Airport (NPIAS classification) with an Airport Reference Code (ARC) of D-V, and is recognized by the state as a Primary System Airport. These designators indicate that Phoenix Sky Harbor International Airport is considered an airport of national and state significance, that the airport has regularly scheduled commercial service enplaning over 10,000 passengers per year, with direct flights over 1,500 miles. The characteristics of the "critical" or largest groups of aircraft that use the airport have approach speeds of between 141 and 166 knots, and wingspans up to 214 feet. Its NPIAS classification indicates that the airport is also eligible to receive FAA entitlement funds, as well as federal and state airport development discretionary funds.
- ♦ Kearny Airport is classified as a state Secondary System general aviation Basic Utility airport with an Airport Reference Code of B-I. This designation indicates that the Kearny Airport is not recognized as an airport of national significance in the NPIAS and, therefore, not eligible for federal airport development funds. Its classification also indicates that the airport serves small, single engine and twin engine piston airplanes; that it has fewer than 10 based aircraft and fewer than 2,000 annual aircraft operations; and that the airport is designed to accommodate aircraft with speeds less than 121 knots with wingspans less than 49 feet.

By identifying the status of each airport in this way, the appropriate design criteria can then be applied to determine the condition of each facility relative to its role in serving the community and the state.

Current Status of Existing Facilities

Table 4-1 presents a listing of facilities included in the SANS and their status based on existing conditions. The status of each facility was based on information reported in the SANS data base, inventory review, a review of airport master plans and regional system plans, information received in airport sponsor questionnaires, and consultation with ADOT staff.

TABLE 4-1: 2000 Status Of Existing Facilities

Facility Name	Of Existing 1		Fa	cility Classifi	cation		
	AZ State		ARC	ARC	ARC	ARC	Comm'l Svc.
	System	NPIAS	A-1	B-I	B-II	B/C-III	ARC C/D
Ajo Municipal	GA-C	X		•			
Avi Suquilla (NA)	GA-C	X			•		
Bagdad	GA-C	X		-			
Benson Municipal	GA-C	X			•		
Bisbee Douglas International	GA-C	X			C- ■		
Bisbee Municipal	GA-C	X				•	
Bowie	GA-E						
Buckeye Municipal	GA-C	X			•	-	
Casa Grande Municipal	GA-C	X			•	-	
Casabel Air park (Private)							
			Pvt Use				
Chandler Municipal	RL	X			•	-	
Chinle Municipal (NA)	GA-C	X					
Cibecue Municipal	GA-C	X					
Cochise College	GA-C						
Cochise County	GA-C	X					
Colorado City Municipal	GA-C	X	•				
Coolidge Municipal	GA-C	X			C-■		•
Cottonwood Municipal	GA-C	X		•			
Douglas Municipal	GA-C					-	
Eagle Airpark (Private)	GA-C						
Eloy Municipal	GA-C	X	•		•		
Ernest A. Love Field	CS	X					•
Estrella Sailport (Private)	GA-C		-				
Falcon Field	RL	X				-	
Flying J Ranch (Private)	GA-C						
Forepaugh	GA-R						
Ganado (NA)	GA-C	X					
Gila Bend Municipal	GA-C	X			•		
Glendale Municipal	RL	X				-	

*Note: Includes General Utility Airports with an ARC of C or D.

Key: ■ Primary System Airports ☐ Secondary System Airports

GA-C = Community Airports with populations in excess of 1,000

GA-R = Rural Airports with populations in excess of 1,000

GA-E = Unpaved airports with emergency capability

RL = Reliever

CS = Commercial Service (L = Large; M = Medium; S = Small)

NA = Native American

ARC Airport Reference Code

Element Four 4-3 H:\CD\ELEMENT FOUR.DOC

TABLE 4-1: 2000 Status Of Existing Facilities (Continued)

Facility Name				acility Classifi	ication		
	AZ State	NPIAS	ARC	ARC	ARC	ARC	Comm'l Svc.
	System	NFIAS	A-I	B-I	B-II	B/C III	ARC C/D
Grand Canyon Bar-Ten (Private)	GA-R						
Grand Canyon Caverns (Private)	GA-R						
Grand Canyon National Park	CS-S	X					•
Grand Canyon West (Gov't.)	CS	X					
Grande Valley	GA-C						
Greenlee County	GA-C	X					
H.A. Clark Memorial Field	GA-C	X				•	
Holbrook Municipal	GA-C	X		•			
Kayenta (NA)	GA-C	X					
Kearny	GA-C						
Kingman Municipal	GA-C	X					•
Lake Havasu City Municipal	CS	X					•
Laughlin/Bullhead International	CS	X					•
Marana-NW Regional	RL	X					•
Marble Canyon (Private)	GA-R						
Memorial Airfield (NA)	GA-C						
Mogollon Air park (Private)			□ Pvt Use				
Nogales International	GA-C	X				-	
Page Municipal	CS	X					
Payson	GA-C	X				-	
Pearce Ferry (Gov't)	GA-R						
Phoenix Deer Valley Municipal	RL	X					
Phoenix Goodyear Municipal	RL	X				•	
Phoenix Sky Harbor Int'l	CS-L	X					•
Pinal Airpark	GA-C	X					
Pleasant Valley (Private)	GA-C		•				
Polacca (NA)	GA-R	X					
Quartzsite No longer a viable candidate							
Rolle Airfield	GA-R						

*Note: Includes General Utility Airports with an ARC of C or D.

Key: ■ Primary System Airports □ Secondary System A ☐ Secondary System Airports GA-C = Community Airports with populations in excess of 1,000

GA-R = Rural Airports with populations in excess of 1,000

GA-E = Unpaved airports with emergency capability

RL = Reliever

CS = Commercial Service (L = Large; M = Medium; S = Small)

NA = Native American

ARC Airport Reference Code

Element Four 4-4 H:\CD\ELEMENT FOUR.DOC

ARIZONA DEPARTMENT OF TRANSPORTATION

Arizona State Aviation Needs Study (SANS) 2000

TABLE 4-1: 2000 Status Of Existing Facilities (Continued)

Facility Name				acility Classifi	cation		
	AZ State	NPIAS	ARC	ARC	ARC	ARC	Comm'l Svc.
	System	INFIAS	A-I	B-I	B-II	B/C-III	ARC C/D
Ryan Airfield	RL	X				-	
Safford Regional	GA-C	X				-	
St. Johns Industrial Airpark	GA-C	X				-	
San Carlos Apache	GA-C	X				-	
San Manuel	GA-C						
Scottsdale	RL	X				-	
Sedona	GA-C	X		•			
Seligman	GA-R						
Sells (NA)	GA-C						
Show Low Municipal	CS	X					•
Sierra Vista Muni/Libby AAF	CS	X					•
Steller Airpark	GA-C						
Sun Valley (Private)	GA-C						
Superior Municipal	GA-C						
Taylor	GA-C	X					
Temple Bar (Gov't.)	GA-R	X					
Three Point (Closed)							
Tombstone Municipal	GA-C						
Town of Springerville Municipal	GA-C	X				•	
Tuba City (NA)	GA-C	X		•			
Tucson International	CS-M	X					•
Tuweep (Gov't.)	GA-R						
Valle Airport (Private)	GA-C						
Whiteriver (NA)	GA-C	X				•	
Wickenburg Municipal	GA-C	X		•			
Williams Gateway	RL	X					•
Window Rock (NA)	GA-C	X				-	
Winslow Lindberg Regional	GA-C	X					
Yuma International/MCAS Yuma	CS	X					•

*Note: Includes General Utility Airports with an ARC of C or D.

Key: ■ Primary System Airports □ Secondary System Airports

GA-C = Community Airports with populations in excess of 1,000

GA-R = Rural Airports with populations in excess of 1,000

GA-E = Unpaved airports with emergency capability

RL = Reliever

CS = Commercial Service (L = Large; M = Medium; S = Small)

NA = Native American

ARC Airport Reference Code

4.2 AIRPORT DEVELOPMENT AND PLANNING GUIDELINES

As described above, the condition of each facility being addressed in the SANS 2000 will be determined by comparing the existing facility to basic design guidelines and standards appropriate to an airport's status. The standards to be used in determining the condition of the system are those developed by the ADOT. Those development standards and planning guidelines are based on FAA airport planning and design advisory circulars with modifications and additions relevant to conditions particular to the State of Arizona.

The State's airport standards, based on an airport's designated classification, are organized and presented as follows:

- Approach Aids
- Buildings
- Design Clearance
- Land Area
- Airport Lighting
- New Urban Airports
- Parking Aprons and Tie-Down Spaces
- Pavement Preservation
- Runways
- Taxiways
- Unlisted Items

Approach Aids

Lighted approach aids such as runway identifier lights and visual approach slope NAVAIDs (VASI, PAPI, and PLASI) should be available at the larger airports but no standards for installation have been established. Radio Aids, along with other approach facilities, are basically FAA responsibilities and the appropriate facilities would necessarily vary on an airport-by-airport basis. However, some general recommendations concerning instrument approach facilities did result from the analysis of airport NAVAIDs by ADOT personnel. These suggestions include the following:

- 1. Precision instrument approach facilities should be provided at all airports with scheduled air carrier service with large aircraft or with 500,000 or more annual operations;
- 2. Direction and distance finding non-precision approach capabilities should be provided at all airports with 100,000 or more annual operations and without severe terrain obstructions;
- 3. Non-precision approach facilities should be provided at all airports with 20,000 or more annual operations and without severe terrain obstructions.

Additionally, establishment of enroute NAVAIDs is suggested to accomplish two objectives:

- 1. VOR or VORTAC facilities within 80 miles of all points in Arizona;
- 2. VOR reception at all points along established airways 3,000 feet above ground level.

These suggestions are based on experience with VOR reception patterns in Arizona and are made to facilitate reliable radio navigation throughout the state.

While the items discussed in this section concern standards for approach aids, they are not intended to infringe on FAA responsibility in this area. They are presented as supplemental considerations to previously adopted State and Federal standards.

Buildings

At minimum, adequate pilot waiting areas should be provided at each airport included in the Primary System. Passenger terminal areas should also be provided where the airport is served by commuter or air carrier flights on a scheduled basis. The size of either facility should be determined by the volume of usage and peak hour passenger levels. The figures presented in Table 4-2 represent minimum areas. Since larger areas may be required in specific instances, a case-by-case analysis should be undertaken before construction.

Hangar space and administrative operating areas are examples of building space which greatly enhance the utility of the airport. FAA Advisor Circular 150/5300-13 provides the basis on which the state standards were formulated. Although the FAA recommends that hangar space be provided for every two based airplanes, this appears excessive for Arizona except at airports having large numbers of business aircraft. Because of Arizona's favorable weather patterns, the development of hangars generally is not as important as in other parts of the country. Therefore, for the lower utilization airports in Arizona, the number of based aircraft per hangar space was increased to four. The FAA criteria were followed as the standard applicable to the larger airports.

Design Clearance

Whenever constructing runways, apron areas, taxiways, and buildings, it is important to allow sufficient space between the respective structures to allow aircraft to taxi safely and to provide adequate clearance. Hence, it is important to provide minimum separation between the runways, taxiways, apron areas, and buildings. Design clearance standards are provided by the FAA and are considered to be consistent with Arizona's needs.

Land Area

The land area standards were derived from information in FAA Advisory Circular 150/5300-4B. The major requirement for land is generated by the runway and approach areas themselves, with smaller areas needed for tiedown and support facilities. Thus, the required land area varies directly with runway length, number and configuration of runways, and size of tiedown and support areas. The land areas presented in Table 4-2 should be considered minimum for reasonable facility planning. Greater land areas may be required at higher elevations due to added runway length requirements dictated by density altitude. Wherever possible, the land area should be sufficiently large to accommodate growth and to protect the airport from the undesirable effects of incompatible development in the vicinity.

Airport Lighting

FAA Advisory Circular 150/5340-24 provides information on standard airport lighting. The principles contained in the circular were followed in establishing SANS lighting standards for all classes of airports. Lighting generally enhances the utility of the airport at night, but some airports in Arizona would attract little night traffic. At these airports some radio-controlled operating devices might be advantageous.

In addition to these standards, several other suggestions were generated from an analysis undertaken by ADOT personnel concerning airport NAVAIDs. The following items, in addition to those found in the Advisory Circular, are recommended:

- 1. Lighted wind indicators should be provided for all airports with lighted runways to aid pilots using the airport at night (except where the airport is serviced by a 24-hour control tower).
- 2. A rotating beacon, runway lights, and taxiway lights or reflectors should be provided at all airports in the Primary System receiving 10,000 or more operations or are over 25 miles from another airport with runway lights and rotating beacon.

These two items would insure that pilots flying at night would be able to determine the wind direction and, under normal atmospheric conditions, find lighted landing facilities within a few minutes' flying time of any airport of destination.

New Urban Airports

The emergence of new airports in primarily metropolitan areas of the state have been considered in the SANS. Construction of additional system airports, as defined by the State Aviation System Plan, should be based on need or access to the National Transportation Network. Construction standards are not set by the FAA for secondary airports, but criteria for Minimum Standards and Planning Guidelines, as adopted by the Arizona Transportation Board, should be followed. Again, planning guidelines are included in Table 4-2. Minimum standards should be followed and include:

- 1. Perimeter fencing should be provided to secure the airport and runway from wildlife and intruders.
- 2. Install wind direction indicator.
- 3. Sufficient grading and drainage are needed to ensure a safe and usable runway surface.
- 4. A hard and level landing surface should be maintained.

Parking Aprons and Tiedown Spaces

An aircraft parking apron for permanently based aircraft, transient aircraft, and air carrier operations, if applicable, should also be part of the airport development program. For safe operation, these areas should be paved and adequate in size to handle normal operations at the airport. It is, therefore, appropriate to set standards for such aprons based on the type of aircraft (that is, square yards per aircraft) and number or aircraft.

Such standards, as developed by the FAA and presented in Advisory Circular 150/5300-13, are appropriate when space must be provided between rows of parked aircraft. However, slightly smaller areas are possible at low-volume airports where multiple rows of parked airplanes may not be required. Thus, the minimum suggested apron areas for the ARC A-I to B-II categories are slightly smaller than FAA standards. All other categories use FAA standards.

Pavement Preservation

The physical condition of the runway, taxiway, and apron pavement is critical for the safe operation of aircraft at an airport. Changes in the climate and weather, along with usage, influence the rate at which pavement deteriorates. Although the issue is not addressed in an FAA Advisory Circular, ADOT personnel recommend that all airports be monitored at a project level as well as a system level. In order to initiate and maintain this program, all master plans will be required to include a section on pavement preservation.

Runways

Runway lengths and widths for the various design classifications of airports are also specified in Advisory Circular 150/5300-13 and are for sea-level, standard-day conditions. In Arizona, with its diverse temperatures and elevations, these basic runway lengths must be adjusted for temperature, density altitude, and runway gradient. The necessary conversion tables are referenced in Advisory Circular 150/5300-13 and should be used to determine the minimum runway length required at any specific airport.

This type of surface and weight bearing strength of the runway are also specified in Advisory Circulars 150/5300-4B and 150/5300-12 and should be used to determine the minimum runway length required at any specific airport. Bearing strength should be adequate for the type of aircraft utilizing the facility and, in general, would increase with the design classification of the runway. Adequate drainage and base material should be used to insure that the runway surface will remain serviceable for the life of the asphalt.

Taxiways

Taxiways and turnarounds are constructed primarily to facilitate aircraft movements to and from the runway. The construction of full parallel taxiway facilities should be undertaken when the utilization of the individual airport reaches levels which could cause hazards or undue delay for airport users. Thus, establishing exact criteria for taxiway construction becomes difficult. The FAA, in Advisory Circular 150/5300-13, suggests that full parallel taxiways should be planned for airports having more than 20,000 annual operations. Airports having fewer operations can

safely accommodate their operations using a partial parallel taxiway or turnarounds. Based on Arizona's utilization pattern, the 20,000 operations criteria was deemed reasonable. Classes of airports receiving this level of utilization should have parallel taxiways with partial taxiways or turnarounds for airports having lower utilization.

Associated with taxiways are connector stubs joining the taxiway to the runway. A sufficient number should be provided to allow access to and from the runway. An area for aircraft to park and fuel after leaving the taxiway should also be provided. The volume of utilization and the frequency of aircraft movements are important factors in determining the size of such a facility. Again, the FAA provides guidance in Advisory Circular 150/5300-13.

Unlisted Items

Numerous miscellaneous items are included which will enhance the utilization of the airport runway and other facilities. No FAA Standards were found for most of these items, but the FAA did recognize the importance of such facilities in the Advisory Circulars referenced in the preceding paragraphs.

Fencing should be provided at Primary System airports to keep animals away from the airfield and to discourage people from entering the airport at improper locations. Restrooms, fuel facilities, auto parking facilities, aircraft maintenance, and utilities, including a telephone, should also be provided if the airport is to offer good service to the flying public. At the busiest airports, eating facilities should be available and, as a local courtesy, some form of public transportation should be available.

For those airports receiving regularly scheduled air carrier service, the FAA requires an Airport Operation Certificate or a waiver therefrom. The operating certificate requires certain crash-fire-rescue equipment, security fencing, and numerous other conditions as stated in FAR 139, thus the requirement for other items as indicated in appropriate FAA documents. Since these are required by law and since they apply to air carrier commercial service airports only, State Standards could only reflect legislative intent and would be redundant. Therefore, only the requirement for an operating certificate is indicated.

Traffic volumes at some airports may require tower facilities for safe traffic movement. The provision of such facilities is within the authority of the FAA, and the agency has developed a procedure to determine the eligibility of specific airports for control towers. This procedure is outlined in FAA documents and should be referenced, as required.

TABLE 4-2: Airport Planning Guidelines - 2000

CT LTP LVVLTVON ONOTEN CO	MATERICIAL CEL	NACE DELIES	TED AND CENT		W. J. IDDODTC	FAA / AAIA
STATE AVIATION SYSTEM CO	DMMERCIAL SEI	RVICE, RELIEV	ER AND GENE	ERAL AVIATIC	ON AIRPORTS	AIRPORTS
TOTAL	Emergency	ARC *	ARC *	ARC *	ARC *	PRIMARY
ITEM	Airports	A-I	B-I	B-II	B/C-III	Air Carrier
I AND.						
LAND:	20	52	67	0.1	200	A D ' 1
Airside (Acres)	20	53 8	57	81 24		As Required
Landside (Acres)	4	8	12	24	30	As Required
RUNWAYS						
Length/Width	Note A	Note A	Note A	Note B	Note B	Note B
Strength (1,000 lbs.) (SWL)	5,000	12,500	12,500	12,500	30,000	Critical Aircraf
Surface	G-rating Gravel	Asphalt/Grav el	Asphalt	Asphalt	Asphalt	Asphalt
Runway Protection Zone	Note C	Note C	Note C	Note C	Note C	Note C
TAVIWAVC.						
TAXIWAYS:		25	2.5	2.5	50	N · B
Full Parallel (Width)		25	35	35	50	Note D
Partial Parallel (length/width)			1,500/35	As Required	As Required	As Required
Connector Stubs (#)		1	2	3	3	As Required
Turn Arounds (#)	1	2	2	None	None	None
DESIGN CLEARANCES (RWY	C/L To:)					
Parallel Taxiway Centerline		150	225	240	300/400	400
Aircraft Parking		125	200	250	400/500	500
Buildings/Hangars		Note C	Note C	Note C	Note C	Note C
AIRCRAFT PARKING APRON (Pavad).					
G.A. Apron (Sq. Yds./BA)	150	300	300	300	450	600
A.C. Apron (Sq. Yds./Gate)				450	450	Critical Aircraf
Transient (Sq. Yds/Aircraft)	150	360	360	360	450	600
Tiedowns	150				Based Aircraft	
LIGHTING:	D 0	n a) (TD)) (TD)) mby) (ID) (IV)
Runway	Reflectors	Reflectors	MIRL	MIRL	MIRL	MIRL/HIRL
Taxiway			Reflectors	MITL	MITL	MITL
Apron					As Required	Yes
Beacon			Yes	Yes	Yes	Yes
APPROACH AIDS:						
REIL					Yes	Yes
Radio Communications					Yes	Yes
Runway Approach Lights				As Required	As Required	Yes
Instrument Approach	As Required	As Required	As Required	NPA	NPA/NPV **	PREC
LANDING AIDS:						
Wind Indicator	Yes	Yes	Yes			
Segmented Circle	1 08	1 68	1 68	Yes	Yes	Yes
VGSI			As Required	Yes	Yes	Yes

TABLE 4-2: Airport Planning Guidelines - 2000(Continued)

STATE AVIATION SYSTEM COM	MERCIAL SER	RVICE, RELIEV	ER AND GENE	ERAL AVIATIO	ON AIRPORTS	FAA / AAIA AIRPORTS
ITEM	Emergency Airports	ARC * A-I	ARC * B-I	ARC * B-II	ARC * B/C-III	PRIMARY Air Carrier
BUILDINGS:						
Pilot Waiting Area (Sq. Ft.)	As Required	450	600	600	600	As Required
Passenger Terminal, AC Only (Sq. Ft.)				450	450	As Required
Based Aircraft/Hangar		4/1	4/1	4/1	2/1	As Required
Administration Area (Sq. Ft.)		200	200	300	400	As Required
MISCELLANEOUS FACILITIES:						
Fencing	Perimeter	Perimeter	Perimeter	Perimeter	Perimeter	Note E
Restrooms	As Required	Yes	Yes	Yes	Yes	Yes
Eating Facilities	As Required	Coin Operate	Coin Operate	Coin Operate	Lunch C'nter	Full Service
Fuel	As Required		Yes	Yes	Yes	Yes
Maintenance	As Required			Yes	Yes	Yes
Utilities	As Required	Yes	Yes	Yes	Yes	Yes
Part 139 Certificate	N/A	ed by an AC	Yes			
Auto Parking Spaces		Depend	lent on Local Co	nditions	•	As Required
Pavement Management		Per Ae	ronautics Divisio	on PMS		As Required

DEFINITIONS:

AC = Air Carrier

G-Rating = An Airport inspectors pavement evaluation rating of "G" equals Good.

GVL = Gravel, or other unpaved surface

NPA = Non precision approach without vertical guidance

NPV = Non precision approach with vertical guidance

PREC = precision approach course and vertical guidance meeting ILS/MLS/WAAS performance conditions

SWL = Single Wheel Loading criteria

VGSI = Visual Glide Slope Indicator (PAPI, PLASI, VASI, etc.)

NOTES:

* = Airport Reference Code (ARC) standards for runways with not lower than 3/4 mile visibility minimums

NPV** = Airports with Commercial Service should attempt to obtain NPV approach

(A) Runway Length (Emerg, 1-A. 1-B) AC 150/5325-4A, Figure 2-1)

(B) Runway Length (ARC II-B, III-B/C) – AC 150/5300-13 or Aircraft Performance Manual

(C) In accordance with FAR Part 77 – Objects Affecting Navigable Airspace

(D) In accordance with AC 150/5300-13, Airport Design Guide

(E) In accordance with AC 107-1 and 108-1

4.3 CONDITION OF THE EXISTING SYSTEM

The condition of the existing system of airports relevant to an individual facility's status and recommended state aviation development standards and planning guidelines pertinent to that facility is shown in Table 4-3. Exhibits 4-1 and 4-2 are charts which graphically indicate the aggregate physical condition of the overall system of aviation facilities. As indicated in these two exhibits, key infrastructure components systemwide that fall below recommended planning guidelines include runway/taxiway separation distances, taxiway widths, and lighting and instrumentation.

Runway capacity is also an important indicator of system condition and performance. Capacity is used to designate the processing capability of an aviation facility over some period of time. Runway capacity is defined as the maximum physical capability of a runway system to process aircraft. It is typically expressed as Annual Service Volume (ASV). As annual aircraft operations approach annual service volume, the average delay to each aircraft throughout the year may increase rapidly with relatively small increases in aircraft operations, thereby causing levels of service on the airfield to deteriorate. Runway capacity can be compared with the existing and forecast demand to ascertain whether improvements to increase capacity will be needed. According to FAA recommendations, planning for additional runway capacity should occur when activity approaches 60 percent of the ASV. Existing runway capacity for SANS airports is shown in Table 4-4.

TABLE 4-3: Existing Conditions - 2000

Facility Name	Size		Primary Ru	ınway Data			Parallel	Taxiway	
					Single Wheel				Twy CL
	Total	Primary	Length	Width	Strength	Parallel	Width	Connect.	to Rwy
	Acrg.	Runway	(ft.)	(ft.)	(000)	Twy	(ft.)	Stubs	CL
Ajo Municipal		12-30							
Avi Suquilla (NA)	-	01-19	•	-	•		-	-	•
Bagdad		05-23							
Benson Municipal		05-23							
Bisbee Douglas Int'l	-	17-35		•	•				
Bisbee Municipal		17-35							
Bowie		08-26							
Buckeye Municipal Airport	-	17-35		•				•	•
Casa Grande Municipal		05-23			•			•	
Chandler Municipal	-	04R-22L	-	•	-			-	
Chinle Municipal		17-35							
Cibecue	N/A	07-25							
Cochise College		05-23						•	
Cochise County	-	03-21	-	•	-			-	•
Colorado City Municipal		11-29							
Coolidge Municipal		05-23						•	
Cottonwood Municipal		14-32						•	
Douglas Municipal	-	03-21							
Eagle Airpark		17-35							
Eloy Municipal		02-20						•	
Ernest A. Love Field	-	03R-21L					•	-	■
Estrella Sailport	-	6R-24L							
Falcon Field	-	04R-22L						•	
Flagstaff - Pulliam	-	03-21		•	-	•	-	-	
Flying J Ranch		06R-24L			•				
Forepaugh									
Ganado (NA)		18-36		-	•				
Gila Bend Municipal		04-22						•	
Glendale Municipal		01-19	■		•			-	
Grand Canyon Bar-Ten		16-34			•				
Grand Canyon Caverns		05-23			•				
Grand Canyon Nat'l Park	•	03-21	•		•		•	-	
Grand Canyon West		17-35							
Grande Valley									
		ļ	П D N-4		ļ	NIA 2		ļ	L

Legend: ■ Meets Recommendations

☐ Does Not Meet Recommendations

NA – Native American

TABLE 4-3: Existing Conditions – 2000 (Continued)

Facility Name	Size			Runway Data			Parallel	Taxiway	
	Total	Primary	Length	Width	Single Wheel Strength	Parallel	Width	Connect.	Twy CL to Rwy
	Acrg.	Runway	(ft.)	(ft.)	(000)	Twy	(ft.)	Stubs	CL
Greenlee County	-	07-25							
H.A. Clark Memorial Field		18-36							
Holbrook Municipal	-	03-21		•		-		-	
Kayenta (NA)		05-23							
Kearny		08-26							
Kingman	-	03-21						-	
Lake Havasu City Municipal	-	14-32				•			
Laughlin/Bullhead Int'l	-	16-34						-	
Marana NW Regional	•	12-30				•	•	-	
Marble Canyon	-	03-21			•				
Nogales International	-	03-21	•	•	•	•		-	
Page Municipal	-	15-33						-	
Payson		06-24				•		-	
Pearce Ferry	-	01-19							
Phoenix Deer Valley	-	7R-25L				•		•	
Phoenix Goodyear	-	03-21				•		-	
Phoenix Sky Harbor Int'l	-	08-26				•	•	-	
Pinal Airpark	-	12-30				•			
Pleasant Valley	-	05-23							
Polacca (NA)		04-22			•				
Quartzite (New)		N/A							
Rolle Airfield		17-35							
Ryan Field	-	06R-24L							
Safford Regional	-	12-30		•					
St. Johns Industrial Airpark		14-32							
San Carlos Apache		09-27							
San Manuel		11-29							
Scottsdale		03-21		•		•			
Sedona	•	03-21		-	-	•		•	
Seligman	•	04-22		-				-	-
Sells (NA)		04-22	-	-	-	1		•	
Show Low Municipal	•	06-24		-	□	■	■	■	■
Sierra Vista Muni/Libby AAF		08-26	•	-					
Stellar Airpark		17-35							

Legend:

■ Meets Recommendations

☐ Does Not Meet Recommendations

NA - Native American

TABLE 4-3: Existing Conditions 2000 (Continued)

Facility Name	Size		Primary F	Runway Dat	a		Parallel	Width Connect (ft.) Stubs			
					Single Wheel				Twy CL		
	Total	Primary	Length	Width	Strength	Parallel	Width	Connect	to Rwy		
	Acrg.	Runway	(ft.)	(ft.)	(000)	Twy	(ft.)	Stubs	CL		
Sun Valley		18-36									
Superior Municipal		04-22									
Taylor		03-21									
Temple Bar		18-36									
Tombstone Municipal		06-24									
Town of Springerville Muni		03-21									
Tuba City (NA)		15-33									
Tucson International		11L-29R						•			
Tuweep		02-20									
Valle Airport		01-19						•			
Whiteriver (NA)		01-19						•			
Wickenburg Municipal		05-23	•		•	•		•			
Williams Gateway		12R-30L									
Window Rock (NA)	-	02-20		•	•						
Winslow-Lindberg Regional		04-22		•	•	•		•			
Yuma International		03L-21R						-	-		

Legend: ■ Meets Recommendations

☐ Does Not Meet Recommendations

NA - Native American

TABLE 4-3: Existing Conditions 2000 (Continued)

Facility Name	Aircraft	Parking			Airport L	ighting		
	Based A/C Parking Apron	Tiedowns	HIRL	MIRL	Reflectors	Taxiway Lighting	Apron Lighting	Beacon
Ajo Municipal		•						•
Avi Suquilla (NA)	•			•				
Bagdad								•
Benson Municipal								
Bisbee Douglas International	•	•		•				
Bisbee Municipal				•				
Bowie								
Buckeye Municipal Airport								•
Casa Grande Municipal		•		•				
Chandler Municipal				•				
Chinle Municipal								
Cibecue								
Cochise College								•
Cochise County								
Colorado City Municipal		•						•
Coolidge Municipal		•						•
Cottonwood Municipal								•
Douglas Municipal	•							
Eagle Airpark	•	•						
Eloy Municipal				•				
Ernest A. Love Field	•			-				•
Estrella Sailport								
Falcon Field				•				•
Flagstaff - Pulliam	•		•					•
Flying J Ranch								
Forepaugh								
Ganado (NA)								
Gila Bend Municipal								•
Glendale Municipal	•			•				-
Grand Canyon Bar-Ten								
Grand Canyon Caverns								
Grand Canyon National Park	•			-				
Grand Canyon West								
Grande Valley								

Legend:

Meets Recommendations

☐ Does Not Meet Recommendations

NA – Native American

EXHIBIT 4-3: Existing Conditions 2000 (Continued)

Facility Name	Aircraft	Parking			Airport I	ighting		
	Based A/C Parking Apron	Tiedowns	HIRL	MIRL	Reflectors	Taxiway Lighting	Apron Lighting	Beacon
Greenlee County	-	•		•				•
H.A. Clark Memorial Field								
Holbrook Municipal								
Kayenta (NA)								•
Kearny								
Kingman				•				
Lake Havasu City Municipal				•				
Laughlin/Bullhead Int'l	•	•		•				•
Marana NW Regional								
Marble Canyon								
Nogales International	•							
Page Municipal	•	•		•				•
Payson				•				
Pearce Ferry	•							
Phoenix Deer Valley	•							
Phoenix Goodyear	•							•
Phoenix Sky Harbor International	•						•	•
Pinal Airpark	•			•				
Pleasant Valley								
Polacca (NA)								
Quartzsite (New)								
Rolle Airfield								
Ryan Field								
Safford Regional								
St. Johns Industrial Airpark	•							•
San Carlos Apache	•							•
San Manuel								
Scottsdale	•			-			•	
Sedona								•
Seligman								
Sells (NA)								
Show Low Municipal	-			-				•
Sierra Vista Muni/Libby AAF	-		•	-				
Stellar Airpark	•							•

Legend: ■ Meets Recommendations □ Does Not Meet Recommendations NA – Native American

TABLE 4-3: Existing Conditions 2000 (Continued)

Facility Name	Aircraft	Parking			Airport L	ighting		
	Based A/C Parking Apron	Tiedowns	HIRL	MIRL	Reflectors	Taxiway Lighting	Apron Lighting	Beacon
Sun Valley								
Superior Municipal		•						
Taylor		•		•				•
Temple Bar		•						
Tombstone Municipal								
Town of Springerville Muni								
Tuba City (NA)		•		•				•
Tucson International				•				
Tuweep								
Valle Airport								
Whiteriver (NA)								
Wickenburg Municipal								
Williams Gateway				•				
Window Rock (NA)		•		•				•
Winslow-Lindberg Regional		•		•				-
Yuma International								

Legend: ■ Meets Recommendations

☐ Does Not Meet Recommendations

NA – Native American

EXHIBIT 4-3: Existing Conditions 2000 (Continued)

Facility Name	Арј	proach Ai	ds	L	anding A	ids		Buildings	
	REIL	ILS/ GPS	NPI	Wind Ind.	PAPI	VASI	Pilot Waiting	Terminal Facilities	Admin. Area (Sq. Ft.)
Ajo Municipal									
Avi Suquilla (NA)				-				•	
Bagdad				-				•	
Benson Municipal									
Bisbee Douglas International				-				•	
Bisbee Municipal					-			•	
Bowie									
Buckeye Municipal Airport									
Casa Grande Municipal									
Chandler Municipal				•				•	
Chinle Municipal									
Cibecue									
Cochise College				•	-				
Cochise County				-				•	
Colorado City Municipal		•		-	•				
Coolidge Municipal		•		-		-			
Cottonwood Municipal				-	•		•	•	
Douglas Municipal				-	•			•	
Eagle Airpark				-				•	
Eloy Municipal								•	
Ernest A. Love Field		•			•				
Estrella Sailport									
Falcon Field				•	-			•	
Flagstaff - Pulliam	•	•		•				•	
Flying J Ranch				•					
Forepaugh									
Ganado (NA)				•					
Gila Bend Municipal									
Glendale Municipal		•			•		•	•	
Grand Canyon Bar-Ten									
Grand Canyon Caverns				•					
Grand Canyon National Park								•	
Grand Canyon West									
Grande Valley									
-		l	l	l	1		l		

Legend: ■ Meets Recommendations

☐ Does Not Meet Recommendations

NA – Native American

TABLE 4-3: Existing Conditions 2000 (Continued)

Facility Name	Ap	proach Ai	ids	Landing Aids			Buildings		
	REIL	ILS/ GPS	NPI	Wind Ind.	PAPI	VASI	Pilot Waiting	Terminal Facilities	Admin. Area (Sq. Ft.)
Greenlee County									
H.A. Clark Memorial Field				•					
Holbrook Municipal	•								
Kayenta (NA)	•								
Kearny									
Kingman						•		•	
Lake Havasu City Municipal	-	-		•		-			
Laughlin/Bullhead Int'l	-	-		•	•		•		
Marana NW Regional						•		•	
Marble Canyon									
Nogales International		•							
Page Municipal	•	•	•						
Payson		•						•	
Pearce Ferry									
Phoenix Deer Valley	-	•						•	
Phoenix Goodyear	-					•		•	
Phoenix Sky Harbor International	-	•				-		•	
Pinal Airpark								•	
Pleasant Valley									
Polacca (NA)				•					
Quartzsite (New)									
Rolle Airfield									
Ryan Field		-		•		-			
Safford Regional		•				-		•	
St. Johns Industrial Airpark		•							
San Carlos Apache		•				•			
San Manuel									
Scottsdale		-			•				
Sedona	-							•	
Seligman									
Sells (NA)									
Show Low Municipal	•							•	
Sierra Vista Muni/Libby AAF		-							
Stellar Airpark									

Legend: ■ Meets Recommendations □ Does Not Meet Recommendations NA – Native American

TABLE 4-3: Existing Conditions 2000 (Continued)

Facility Name	Approach Aids			Landing Aids			Buildings		
	REIL	ILS/ GPS	NPI	Wind Ind.	PAPI	VASI	Pilot Waiting	Terminal Facilities	Admin. Area (Sq. Ft.)
Sun Valley				•					
Superior Municipal									
Taylor		•							
Temple Bar				•					
Tombstone Municipal									
Town of Springerville Municipal				•					
Tuba City (NA)				•					
Tucson International	•								
Tuweep				-					
Valle Airport									
Whiteriver (NA)				•					
Wickenburg Municipal									
Williams Gateway		•	•						
Window Rock (NA)	•	•		•					
Winslow-Lindberg Regional	•	•		•				•	
Yuma International	-	•	•	•		•			

Legend: ■ Meets Recommendations

☐ Does Not Meet Recommendations

NA – Native American

EXHIBIT 4-3: Existing Conditions 2000 (Continued)

Facility Name		Miscellaneous								
			Eating	Maint.		Part 139	139			
	Fencing	Restrooms	Facilities	Facilities	Utilities	Cert.	Based A/C			
Ajo Municipal							5			
Avi Suquilla (NA)							18			
Bagdad							14			
Benson Municipal							0			
Bisbee Douglas International							31			
Bisbee Municipal							10			
Bowie							3			
Buckeye Municipal Airport							74			
Casa Grande Municipal							59			
Chandler Municipal							295			
Chinle Municipal							2			
Cibecue							0			
Cochise College							14			
Cochise County							15			
Colorado City Municipal							11			
Coolidge Municipal							1			
Cottonwood Municipal							35			
Douglas Municipal							29			
Eagle Airpark							52			
Eloy Municipal							39			
Ernest A. Love Field							290			
Estrella Sailport							23			
Falcon Field							923			
Flagstaff - Pulliam						•	120			
Flying J Ranch							6			
Forepaugh										
Ganado (NA)							0			
Gila Bend Municipal							2			
Glendale Municipal							250			
Grand Canyon Bar-Ten							1			
Grand Canyon Caverns							0			
Grand Canyon National Park							53			
Grand Canyon West							0			
Grande Valley										

Legend:

■ Meets Recommendations

☐ Does Not Meet Recommendations

NA – Native American

TABLE 4-3: Existing Conditions 2000 (Continued)

Facility Name	Miscellaneous								
			Eating	Maint.		Part 139			
	Fencing	Restrooms	Facilities	Facilities	Utilities	Cert.	Based A/C		
Greenlee County							4		
H.A. Clark Memorial Field							12		
Holbrook Municipal							10		
Kayenta (NA)							3		
Kearny							3		
Kingman							180		
Lake Havasu City Municipal							184		
Laughlin/Bullhead Int'l							59		
Marana NW Regional							216		
Marble Canyon							1		
Nogales International							23		
Page Municipal							33		
Payson							54		
Pearce Ferry							0		
Phoenix Deer Valley							918		
Phoenix Goodyear							196		
Phoenix Sky Harbor International							296		
Pinal Airpark							83		
Pleasant Valley							65		
Polacca (NA)									
Quartzsite (New)							0		
Rolle Airfield							0		
Ryan Field							253		
Safford Regional							28		
St. Johns Industrial Airpark							9		
San Carlos Apache							48		
San Manuel							8		
Scottsdale							400		
Sedona							96		
Seligman							4		
Sells (NA)							1		
Show Low Municipal							47		
Sierra Vista Muni/Libby AAF							40		
Stellar Airpark							139		

Legend: ■ Meets Recommendations □ Does Not Meet Recommendations NA – Native American

TABLE 4-3: Existing Conditions 2000 (Continued)

Facility Name	Miscellaneous							
			Eating	Maint.		Part 139		
	Fencing	Restrooms	Facilities	Facilities	Utilities	Cert.	Based A/C	
Sun Valley							14	
Superior Municipal							0	
Taylor							18	
Temple Bar							0	
Tombstone Municipal							0	
Town of Springerville Municipal							16	
Tuba City (NA)							0	
Tucson International							412	
Tuweep							0	
Valle Airport							4	
Whiteriver (NA)							8	
Wickenburg Municipal							39	
Williams Gateway							60	
Window Rock (NA)							8	
Winslow-Lindberg Regional							15	
Yuma International						•	95	

Legend: ■ Meets Recommendations

☐ Does Not Meet Recommendations

NA – Native American

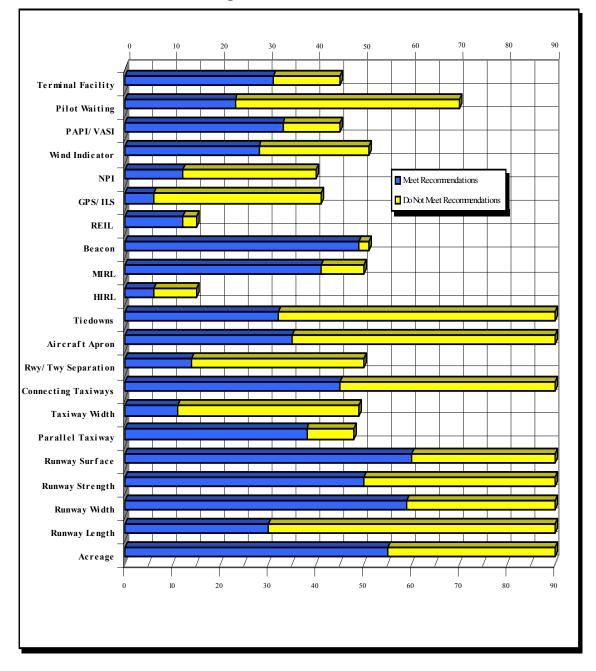


EXHIBIT 4-1: Facilities Meeting Current Recommendations – 2000

H-VCD/ELEMENT FOUR JOC Element Four 4-26

EXHIBIT 4-2: Facilities Meeting Recommendations By Percent - 2000

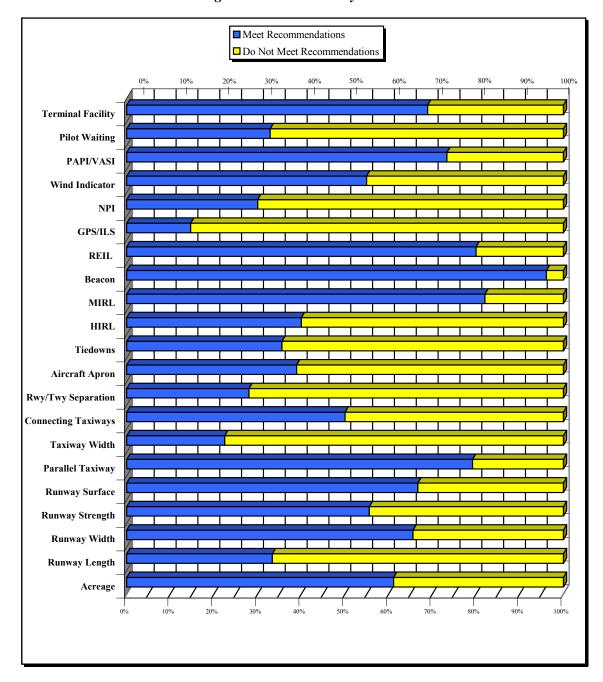


TABLE 4-4: Capacity Of Existing Runway Facilities - 2000

Facility Name	1998 Operations	Annual Service	Percent	Condition
		Volume	Capacity	_
Ajo Municipal *	1,900	175,000	1%	
Avi Suquilla (NA)	14,000		8%	-
Bagdad	14,000	143,300	10%	-
Benson Municipal	0	123,284	100/	-
Bisbee Douglas Int'l	32,000	325,360	10%	-
Bisbee Municipal *	3,020	147,600	2%	-
Bowie	850	120,000	1%	-
Buckeye Municipal Airport	16,020	245,000	7%	-
Casa Grande Municipal *	65,400	285,000	23%	
Chandler Municipal	153,800	269,000	57%	
Chinle Municipal	900	120,000	1%	
Cibecue	45 250	267.000	170/	•
Cochise College *	45,250	267,000	17%	-
Cochise County *	7,096	230,000	3%	
Colorado City Municipal *	3,680	110,700	3%	
Coolidge Municipal	91,500	347,600	26% 7%	
Cottonwood Municipal	19,410	295,100		
Douglas Municipal	11,100	155,200	7% 4%	
Eagle Airpark *	5,053 23,100	225,400	8%	
Eloy Municipal Ernest A. Love Field		285,400		
	353,299	326,400	108%	-
Estrella Sailport	16,500 220,969	120,000	14% 58%	
Falcon Field	-	381,800	23%	-
Flagstaff – Pulliam *	63,400 800	274,000	1%	
Flying J Ranch	800	120,000	170	-
Forepaugh	700	120,000	10/	
Ganado (NA) Gila Bend Municipal *	700 4,550	120,000 174,900	1% 3%	
Glendale Municipal *	150,000	275,000	55%	
•			2%	
Grand Canyon Bar-Ten	2,000	120,000	1%	
Grand Canyon Caverns Grand Canyon National Park *	700 164,479	120,000	105%	
Grand Canyon West	104,479	156,000 120,000	0%	
Grande Valley	0	120,000	070	-
Greenlee County	6,650	126,300	5%	_
H. A. Clark Memorial Field	3,600	137,400	3%	-
Holbrook Municipal	4,650	267,400	2%	+ =
Kayenta (NA)	4,700		4%	
Kearny	4,200	120,000	4%	-
Kingman	33,000	347,600	9%	-
Lake Havasu City Municipal	55,344	307,900	18%	_
Laughlin/Bullhead International	47,316		18%	
Marana NW Regional	71,300		31%	
Marble Canyon	2,340		2%	_
Memorial Airfield (NA)	25,500	100,000	26%	
				-
Nogales International	22,890	276,100	8%	

[■] Less than 60% of capacity

[☐] More than 60% of capacity

 ^{*} Indicates survey information

NA Native American

TABLE 4-4: Capacity Of Existing Runway Facilities – 2000 (continued)

Trible in Cupacity of Ext	sting month they i the	= = = = = = = = = = = = = = = = = = = =	communeary	
Facility Name	1998 Operations	Annual Service	Percent	Condition
		Volume	Capacity	
Page Municipal	31,988	294,600		
Payson	25,000	267,000		
Pearce Ferry	1,100	120,000		
Phoenix Deer Valley *	281,124	336,400	84%	
Phoenix Goodyear *	157,250	276,100	57%	
Phoenix Sky Harbor International *	537,822	475,000		
Pinal Airpark	10,368	195,000	5%	
Pleasant Valley *	48,000	120,000	40%	
Polacca (NA)	5,300	120,000	4%	
Rolle Airfield *	4,900	120,000	4%	
Ryan Field *	157,659	355,000		
Safford Regional *	14,750	286,700	5%	
St. Johns Industrial Airpark	15,000	286,700	5%	
San Carlos Apachel	16,200	285,400	6%	
San Manuel	1,000	120,700		
Scottsdale	182,153	294,600	62%	
Sedona	41,000	276,100	15%	
Seligman	1,100	120,000		
Sells (NA)	1,310	130,000		
Show Low Municipal *	29,170	378,400		
Sierra Vista Muni/Libby AAF	49,651	367,400		
Springerville Airport	8,580	286,700		
Stellar Airpark	41,020	120,000	34%	
Sun Valley	750	120,000		
Superior Municipal	400	120,000		
Taylor	4,800	137,400	3%	
Temple Bar	1,800	120,000		
Tombstone Municipal	350	105,900	0%	
Tuba City (NA)	7,000	120,000	6%	
Tucson International *	266,428	380,000	70%	
Tuweep	100	120,000		
Valle Airport		120,000		
Whiteriver (NA)	1,730	230,000		
Wickenburg Municipal	18,377	267,000		
Williams Gateway	228,313	410,000		
Window Rock (NA)	2,050	120,000		
Winslow-Lindberg Regional	27,650	286,700		
Yuma International	172,975	347,600		

■ Less than 60% of capacity
□ More than 60% of capacity

Indicates survey information

NA Native American

Element Four 4-29 H:\CD\ELEMENT FOUR.DOC

ARIZONA DEPARTMENT OF TRANSPORTATION

Arizona State Aviation Needs Study (SANS) 2000

This Page Intentionally Left Blank